SkyTran

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SkyTran Technology Collaborations

Academic, Government & Industry

NASA Ames Research Center

NASA National Center for Advanced Manufacturing

United States Dept. of Transportation

Research & Innovative Technology Program Grant

University of California

Power Electronics

Software Simulation

-
- **One Cycle Control, Inc. -** ***Power Management Systems***
- **Advanced Digital Manufacturing, Inc. –** ***Vehicle Development***

Traffic in 2020

Congestion often #1 voter issue

Based on 2% annual VMT Growth

The problem with Rail & Buses

- Slow avg speed
- Grade-separated construction projects take years
- Elevating multi-ton vehicles are expensive
- Operating costs of wheeled systems high

Only 2-3% of the public uses this “solution”

The problem with PHEV

- Technology risk
- Business risk
- Current vehicles cost < $15k
- PHEV > $30k
- Subsidies needed
- Highway repair funding ?
- Car sales $$ leave state

What is SkyTran?

SkyTran Architecture

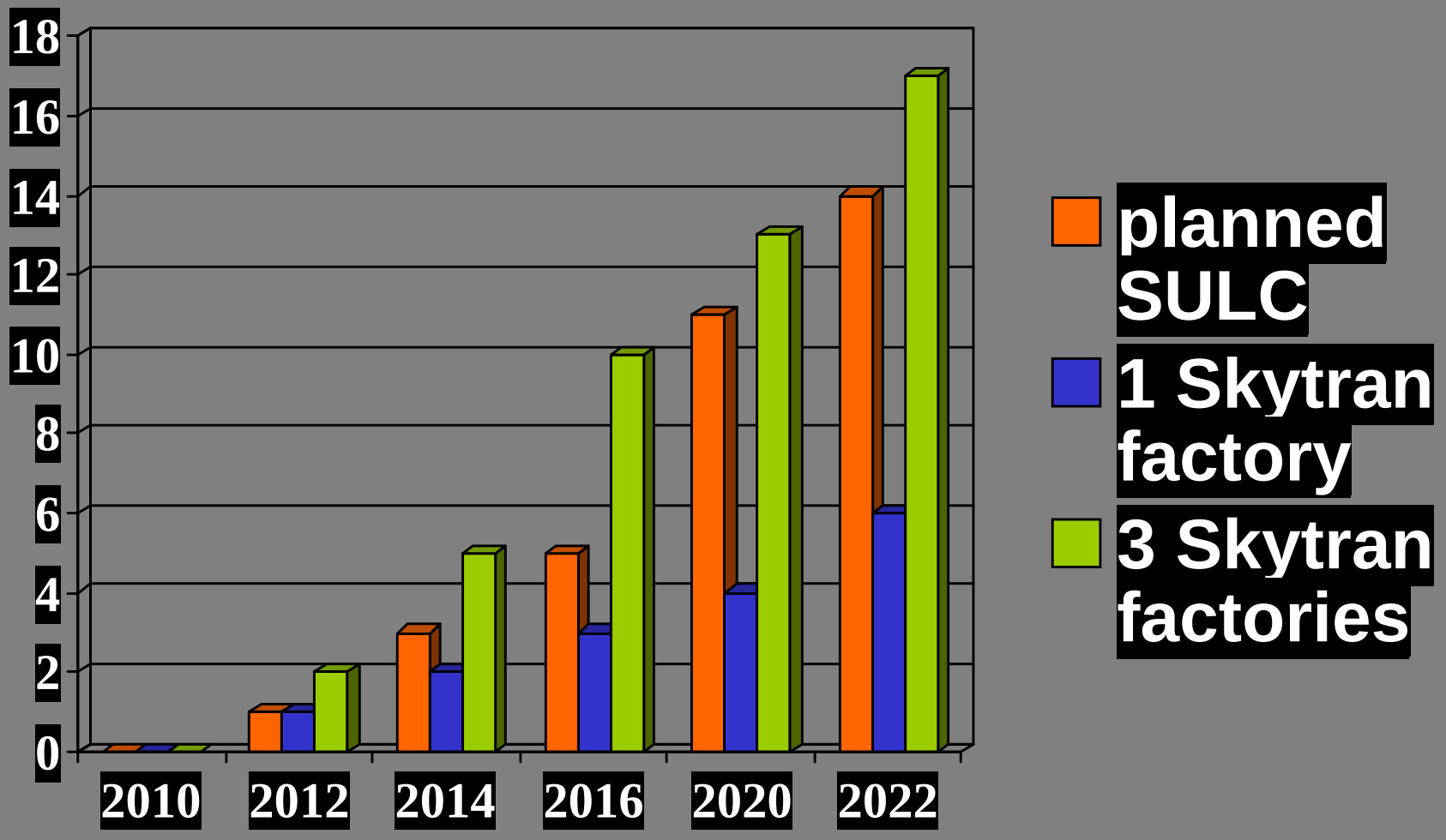
Network of Non-Stop Guideways Accessed by On-Ramps & Off-Ramps

Same Design as Interstate Highways

Comparison Matrix

	ULC/SULC	Transit	Skytran
Permits			
Capital Cost	$100B	$450B	$45B
Operating Cost	$0.50-$0.90/mi	$1-$3 /mile	$0.25-$0.50/mile
Tax subsidy			reduces
Lb. CO2 /pass mile	0.2	2 / .06	.02
User Experience	Private, slow-rush	Public, slow	Private, fast
Cal Business			

GHG Reductions



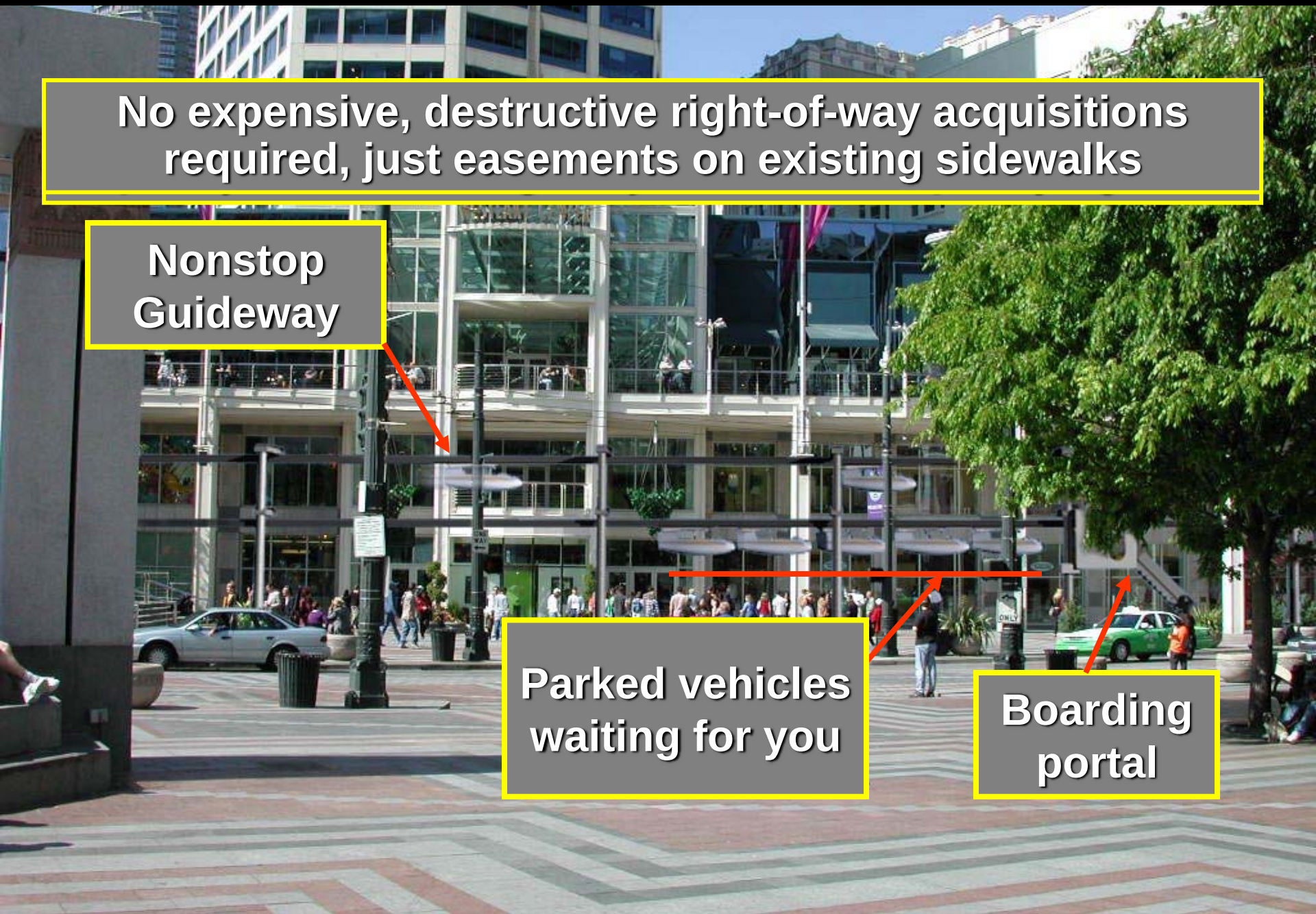
1 factory = 100 miles guideway annually
Assuming 40,000 ppd per mile guideway

SkyTran Traffic “Lane”

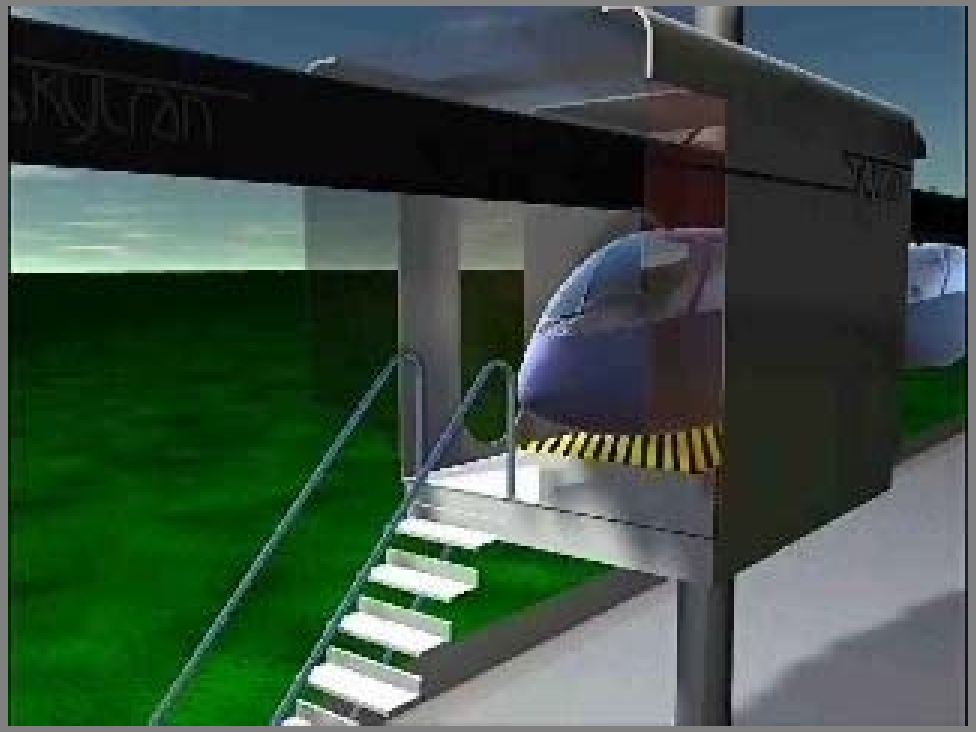
Equivalent to 3 Lane Freeway 14,400 pph

2005 BART peak capacity 12,000 pph

SkyTran Disappears into the Cityscape



Low Cost, Mass Produced Modular Components



Small Personal Vehicles

Light Guideway Beams

IP 6 Addressable MagLev-Motor Modules

Standard Utility Pole Supports

Inexpensive Portals

Apply Henry Ford's 100 Year Old Principles of Mass Production

NASA Role in SkyTran Demo

World–class systems developer

Culture of safety, history of lessons learned

Unique Tools for *Verifying* functionality

Leverage Air traffic control group for software

Human factors and safety

System engineering

Prognostics

Summary and Questions

1. SkyTran solves GHG & congestion
2. Emulates cars, increasing acceptance reducing VMT
3. Lowest capital-O&M costs
4. Elevated guideways are safer, allow quick installation
5. Profitable business model saves cities from growing transit budgets

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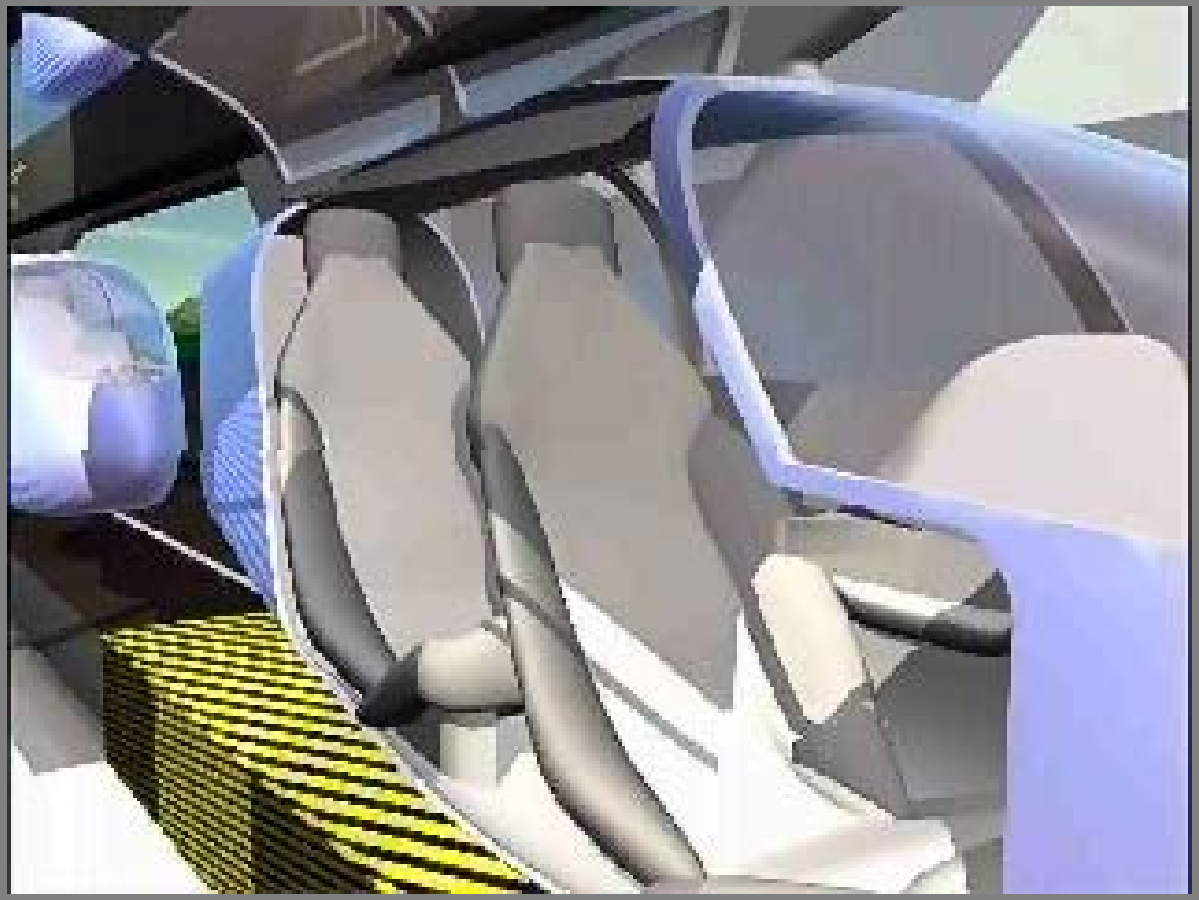
Vehicle ensures privacy



Concept Vehicle and Guideway available for viewing at NASA Ames in March

One Cycle Control

Invented @ Caltech

Developed @ UC Irvine Power Elect. Lab

Power Conversion Paradigm shift:

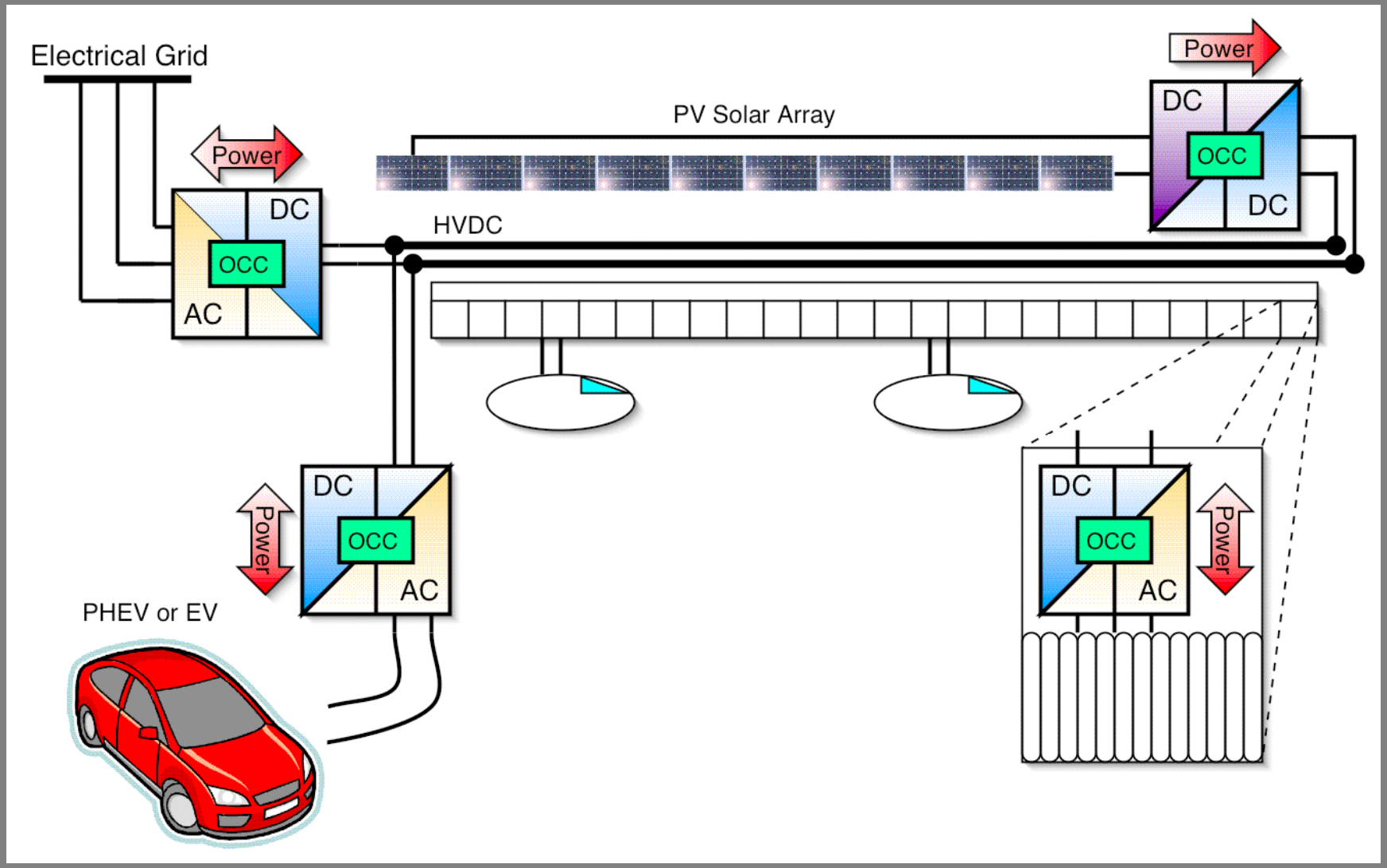
Active Conversion without Software

(DoD, DoE, CEC)

One-Cycle Control, Inc.

One Cycle Control

+ PHEV or EV Charging & VTG



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PRT Key to Transit Oriented Development

California Air Resources Board Economic Technology Advancement Advisory Committee Report Draft 12-21-07

“PRT…could substantially broaden the reach of transit oriented development by expanding beyond existing transit corridors and forming networks. Environmentally, PRT offers … quieter, zero emission operation.”

Next Generation PRT

SkyTran™

High Speed
Up to 150 mph

Scalable Networks
Local, Regional, National Service

Low Maintenance
Uses maglev instead of wheels

Under 1000 lbs.
Uses aerodynamic vehicles

Energy Efficient
Up to 500 mpg

Zero Carbon
Solar Powered